

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-5 (canceled)

1 **Claim 6 (currently amended):** A waveform equalizer as
2 ~~claimed in any one of the preceding claims 1, 2 and 3,~~
3 comprising:
4 an equalizing filter unit including a delay circuit
5 with a tap;
6 a discriminator which decodes an output signal of said
7 equalizing filter unit;
8 tap arrangement control means which controls a tap
9 arrangement of said equalizing filter unit; and
10 tap coefficient monitoring unit which monitors a tap
11 coefficient of said equalizing filter unit, and changes the
12 tap arrangement of said equalizing filter unit so as to
13 restart a starting step of the equalizing filter unit for
14 equalizing a reception signal, depending upon a change
15 state of the tap coefficient used while the reception
16 signal is equalized;
17 wherein said tap arrangement control means further
18 comprising an impulse response predicting device for
19 predicting an impulse response of a transfer path; and
20 wherein said tap arrangement control means changes the
21 tap arrangement of said equalizing filter unit in such a

22 manner that said tap arrangement becomes suitable for the
23 next impulse having a large pulse component in response to
24 an impulse response predicted by a reference signal.

1 **Claim 7 (currently amended):** A waveform equalizer ~~as~~
2 ~~claimed in any one of the preceding claims 1, 2 and 3,~~
3 comprising:

4 an equalizing filter unit including a delay circuit
5 with a tap;

6 a discriminator which decodes an output signal of said
7 equalizing filter unit;

8 tap arrangement control means which controls a tap
9 arrangement of said equalizing filter unit; and

10 tap coefficient monitoring unit which monitors a tap
11 coefficient of said equalizing filter unit, and changes the
12 tap arrangement of said equalizing filter unit so as to
13 restart a starting step of the equalizing filter unit for
14 equalizing a reception signal, depending upon a change
15 state of the tap coefficient used while the reception
16 signal is equalized;

17 wherein said tap arrangement control means comprising
18 an impulse response predicting device for predicting an
19 impulse response of a transfer path; and

20 wherein said tap arrangement control means changes the
21 tap arrangement of said equalizing filter unit in such a
22 manner that said tap arrangement becomes optimum with
23 respect to an impulse response predicted by both the

24 equalized output of said discriminator and a condition of
25 the reception signal.

Claims 8-10 (canceled)

1 **Claim 11 (currently amended):** A mobile station
2 wireless apparatus equipped with a waveform equalizer
3 capable of removing an adverse influence caused by
4 frequency selective fading, said waveform equalizer
5 comprising:
6 an equalizing filter unit including a delay circuit
7 with a tap;
8 a discriminator which decodes an output signal of said
9 equalizing filter unit;
10 tap arrangement control means which controls a tap
11 arrangement of said equalizing filter unit;
12 a tap coefficient monitoring unit which monitors a tap
13 coefficient of said equalizing filter unit; and
14 detector means which detects a moving speed of the
15 mobile station wireless apparatus,
16 wherein when the moving speed is higher than a
17 preselected threshold value, the tap arrangement of said
18 equalizing filter unit is changed so as to restart a
19 starting step of the equalizing filter unit for equalizing
20 a reception signal, depending upon a change state of the
21 tap coefficient used while the reception signal is
22 equalized.

1 **Claim 12 (currently amended):** A mobile station
2 wireless apparatus equipped with a waveform equalizer
3 capable of removing an adverse influence caused by
4 frequency selective fading, said waveform equalizer
5 comprising:

6 an equalizing filter unit including a delay circuit
7 with a tap;

8 a discriminator which decodes an output. signal of
9 said equalizing filter unit;

10 tap arrangement control means which controls a tap
11 arrangement of said equalizing filter unit;

12 a tap coefficient monitoring unit which monitors a tap
13 coefficient of said equalizing filter unit; and

14 detector means which detects a moving speed of the
15 mobile station wireless apparatus,

16 wherein when the moving speed is higher than a
17 preselected threshold value, the tap arrangement of said
18 equalizing filter unit is changed so as to restart
19 reception signal equalizing steps from a preselected step
20 prior to the present step thereof while said reception
21 signal is equalized, depending upon a change state of the
22 tap coefficient during the equalization of said reception
23 signal.

1 **Claim 13 (currently amended):** A mobile station
2 wireless apparatus equipped with a waveform equalizer

3 capable of removing an adverse influence caused by
4 frequency selective fading, said waveform equalizer
5 comprising:

6 an equalizing filter unit including a delay circuit
7 with a tap;

8 a discriminator which decodes an output signal of said
9 equalizing filter unit;

10 tap arrangement control means which controls a tap
11 arrangement of said equalizing filter unit;

12 a tap coefficient monitoring unit which monitors a tap
13 coefficient of said equalizing filter unit; and

14 detector means which detects a moving speed of the
15 mobile station wireless apparatus,

16 wherein when the moving speed is higher than a
17 preselected threshold value, an operation is performed in
18 which the tap arrangement of said equalizing filter unit is
19 changed so as to restart reception signal equalizing steps
20 from a preselected step prior to the present step thereof
21 while said reception signal is equalized, depending upon a
22 change state of the tap coefficient during the equalization
23 of said reception signal; and further so as to repeatedly
24 perform said operation, depending upon a change condition
25 of the tap coefficient while restarting the equalization of
26 said reception signal.

Claims 14-19 (canceled)

1 **Claim 20 (previously presented):** A mobile
2 communication system having a base station and a mobile
3 station, in which said mobile station is equipped with a
4 waveform equalizer capable of removing an adverse influence
5 caused by frequency selective fading, said waveform
6 equalizer comprising:
7 an equalizing filter unit including a delay circuit
8 with a tap;
9 a discriminator which decodes an output signal of said
10 equalizing filter unit;
11 tap arrangement control means which controls a tap
12 arrangement of said equalizing filter unit;
13 a tap coefficient monitoring unit which monitors a tap
14 coefficient of said equalizing filter unit; and
15 detector means which detects a moving speed of the
16 mobile station wireless apparatus,
17 wherein when the moving speed is higher than a
18 preselected threshold value, the tap arrangement of said
19 equalizing filter unit is changed so as to restart a
20 starting step of the equalizing filter unit for equalizing
21 a reception signal, depending upon a change state of the
22 tap coefficient used while the reception signal is
23 equalized.

1 **Claim 21 (original):** A mobile communication system
2 having a base station and a mobile station, in which said
3 mobile station is equipped with a waveform equalizer

4 capable of removing an adverse influence caused by
5 frequency selective fading, said waveform equalizer
6 comprising:

7 an equalizing filter unit including a delay circuit
8 with a tap;

9 a discriminator which decodes an output signal of said
10 equalizing filter unit;

11 tap arrangement control means which controls a tap
12 arrangement of said equalizing filter unit;

13 a tap coefficient monitoring unit which monitors a tap
14 coefficient of said equalizing filter unit; and

15 detector means which detects a moving speed of the
16 mobile station wireless apparatus,

17 wherein when the moving speed is higher than a
18 preselected threshold value, the tap arrangement of said
19 equalizing filter unit is changed so as to restart
20 reception signal equalizing steps from a preselected step
21 prior to the present step thereof while said reception
22 signal is equalized, depending upon a change state of the
23 tap coefficient during the equalization of said reception
24 signal.

1 **Claim 22 (previously presented):** A mobile
2 communication system having a base station and a mobile
3 station, in which said mobile station is equipped with a
4 waveform equalizer capable of removing an adverse influence

5 caused by frequency selective fading, said waveform
6 equalizer comprising:

7 an equalizing filter unit including a delay circuit
8 with a tap;

9 a discriminator which decodes an output signal of said
10 equalizing filter unit;

11 tap arrangement control means which controls a tap
12 arrangement of said equalizing filter unit;

13 a tap coefficient monitoring unit which monitors a tap
14 coefficient of said equalizing filter unit; and

15 detector means which detects a moving speed of the
16 mobile station wireless apparatus,

17 wherein when the moving speed is higher than a
18 preselected threshold value, an operation is performed in
19 which the tap arrangement of said equalizing filter unit is
20 changed so as to restart reception signal equalizing steps
21 from a preselected step prior to the present step thereof
22 while said reception signal is equalized, depending upon a
23 change state of the tap coefficient during the equalization
24 of said reception signal; and further so as to repeatedly
25 perform said operation, depending upon a change condition
26 of the tap coefficient while restarting the equalization of
27 said reception signal.

1 **Claim 23 (new):** A waveform equalizer equipped
2 comprising:

3 an equalizing filter unit including a delay circuit
4 with a tap;

5 a discriminator which decodes an output signal of said
6 equalizing filter unit;

7 tap arrangement control means which controls a tap
8 arrangement of said equalizing filter unit; and

9 a tap coefficient monitoring unit which monitors a tap
10 coefficient of said equalizing filter unit, and changes the
11 tap arrangement of said equalizing filter unit so as to
12 restart reception signal equalizing steps from a
13 preselected step prior to the present step thereof while
14 said reception signal is equalized, depending upon a change
15 state of the tap coefficient during the equalization of
16 said reception signal;

17 wherein said tap arrangement control means further
18 comprising an impulse response predicting device for
19 predicting an impulse response of a transfer path; and

20 wherein said tap arrangement control means changes the
21 tap arrangement of said equalizing filter unit in such a
22 manner that said tap arrangement becomes suitable for the
23 next impulse having a large pulse component in response to
24 an impulse response predicted by a reference signal.

1 **Claim 24 (new):** A waveform equalizer equipped
2 comprising:

3 an equalizing filter unit including a delay circuit
4 with a tap;

5 a discriminator which decodes an output signal of said
6 equalizing filter unit;

7 tap arrangement control means which controls a tap
8 arrangement of said equalizing filter unit;

9 a tap coefficient monitoring unit which performs an
10 operation of monitoring a tap coefficient of said
11 equalizing filter unit and changing the tap arrangement of
12 said equalizing filter unit so as to restart reception
13 signal equalizing steps from a preselected step prior to
14 the present step thereof while said reception signal is
15 equalized, depending upon a change state of the tap
16 coefficient during the equalization of said reception
17 signal, and further so as to repeatedly perform said
18 operation, depending upon a change condition of the tap
19 coefficient while restarting the equalization of said
20 reception signal;

21 wherein said tap arrangement control means further
22 comprising an impulse response predicting device for
23 predicting an impulse response of a transfer path; and

24 wherein said tap arrangement control means changes the
25 tap arrangement of said equalizing filter unit in such a
26 manner that said tap arrangement becomes suitable for the
27 next impulse having a large pulse component in response to
28 an impulse response predicted by a reference signal.

1 **Claim 25 (new):** A waveform equalizer equipped
2 comprising:

3 an equalizing filter unit including a delay circuit
4 with a tap;

5 a discriminator which decodes an output signal of said
6 equalizing filter unit;

7 tap arrangement control means which controls a tap
8 arrangement of said equalizing filter unit; and

9 a tap coefficient monitoring unit which monitors a tap
10 coefficient of said equalizing filter unit, and changes the
11 tap arrangement of said equalizing filter unit so as to
12 restart reception signal equalizing steps from a
13 preselected step prior to the present step thereof while
14 said reception signal is equalized, depending upon a change
15 state of the tap coefficient during the equalization of
16 said reception signal;

17 wherein said tap arrangement control means comprising
18 an impulse response predicting device for predicting an
19 impulse response of a transfer path; and

20 wherein said tap arrangement control means changes the
21 tap arrangement of said equalizing filter unit in such a
22 manner that said tap arrangement becomes optimum with
23 respect to an impulse response predicted by both the
24 equalized output of said discriminator and a condition of
25 the reception signal.

1 **Claim 26 (new):** A waveform equalizer equipped
2 comprising:

3 an equalizing filter unit including a delay circuit
4 with a tap;

5 a discriminator which decodes an output signal of said
6 equalizing filter unit;

7 tap arrangement control means which controls a tap
8 arrangement of said equalizing filter unit;

9 a tap coefficient monitoring unit which performs an
10 operation of monitoring a tap coefficient of said
11 equalizing filter unit and changing the tap arrangement of
12 said equalizing filter unit so as to restart reception
13 signal equalizing steps from a preselected step prior to
14 the present step thereof while said reception signal is
15 equalized, depending upon a change state of the tap
16 coefficient during the equalization of said reception
17 signal, and further so as to repeatedly perform said
18 operation, depending upon a change condition of the tap
19 coefficient while restarting the equalization of said
20 reception signal;

21 wherein said tap arrangement control means comprising
22 an impulse response predicting device for predicting an
23 impulse response of a transfer path; and

24 wherein said tap arrangement control means changes the
25 tap arrangement of said equalizing filter unit in such a
26 manner that said tap arrangement becomes optimum with
27 respect to an impulse response predicted by both the
28 equalized output of said discriminator and a condition of
29 the reception signal.